

the cells, wherein the biological process is characterized in that production of an intracellular product indicates activity of the process;

introducing the cells and the test compounds into the plurality of reaction vessels, wherein each reaction vessel contains a subset of the library of test compounds;

contacting the test compounds with the cells for a period of time and under conditions sufficient for the test compounds to exert an effect on the biological process so that levels of the intracellular product are affected;

introducing into each reaction vessel a ligand that binds specifically to the intracellular product in the biological process so that the ligand binds to the product;

washing away unbound ligands; and

measuring levels of ligand which bound to the biological component.

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Claim 42. A method for screening a library of test compounds to identify those compounds with effects on a biological process in cells, comprising steps of:

providing a plurality of reaction vessels, wherein each reaction vessel has a volume of liquid less than or equal to approximately 50 microliters,

providing a plurality of cells;

providing a library of test compounds to be assayed for effects on a biological process in the cells, wherein the biological process is characterized in that production of a product indicates activity of the process;

introducing the cells and the test compounds into the plurality of reaction vessels, wherein each reaction vessel contains a subset of the library of test compounds;

contacting the test compounds with the cells for a period of time and under conditions sufficient for the test compounds to exert an effect on the biological process so that levels of the product are affected;

introducing into each reaction vessel a ligand that binds specifically to the product in the biological process so that the ligand binds to the product;

washing away unbound ligands; and

measuring levels of ligand which bound to the biological component.

Claim 43. The method of claim 41, wherein in the step of providing a plurality of reaction vessels, the volume of liquid in each reaction vessel is less than or equal to approximately 50 microliters.

Claim 44. The method of claim 41 or 42, wherein in the step of providing a plurality of reaction vessels, the volume of liquid in each reaction vessel is less than or equal to approximately 2 microliters.

Claim 45. The method of claim 41 or 42, wherein in the step of providing a plurality of reaction vessels, the volume of liquid in each reaction vessel is less than or equal to approximately 250 nanoliters.

Claim 46. The method of claim 41 or 42, wherein in the step of providing a plurality of reaction vessels, a number of reaction vessels is greater than or equal to approximately 1536.

Claim 47. The method of claim 41 or 42, wherein in the step of providing a plurality of cells, the cells are eukaryotic cells.

Claim 48. The method of claim 41 or 42, wherein in the step of providing a plurality of cells, the cells are mammalian cells.

Claim 49. The method of claim 41 or 42, wherein in the step of providing a plurality of cells, the cells are human cells.

Claim 50. The method of claim 41 or 42, wherein in the step of providing a library of test compounds, the biological process is nucleic acid synthesis, protein phosphorylation, polypeptide synthesis, protein cleavage, peptide cleavage, carbohydrate addition, or carbohydrate cleavage.

Claim 51. The method of claim 41 or 42, wherein in the step of introducing the cells and the

test compounds into the plurality of reaction vessels, each reaction vessel contains an average of one test compound from the library of test compounds.

Claim 52. The method of claim 41 or 42, wherein in the step of introducing a ligand into each reaction vessel, the ligand is an antibody.

Claim 53. The method of claim 41 or 42, wherein the step of measuring comprises measuring levels of ligand which bound to the biological component by measuring levels of photon emissions.

C/ Claim 54. The method of claim 41 or 42, wherein before the step of measuring, the method further comprises introducing a second ligand that binds specifically to the ligand and washing away unbound second-ligands, and wherein the step of measuring comprises measuring levels of ligand comprises measuring levels of the second ligand.

Claim 55. The method of claim 54, wherein the second ligand is an antibody.

Claim 56. The method of claim 55, wherein the second ligand is an antibody conjugated to horseradish peroxidase, and wherein the levels of the second ligand are detected by detecting levels of radiation, fluorescence or chemiluminescence.--

REMARKS

Reexamination and reconsideration of the rejections as applied in this case is hereby requested. All of the pending claims (1, 2, 5, 6, 9, 10, 13, 14, 18, 19, 22 and 23) were rejected in the Office Action. These claims have been canceled and replaced by new claims 41-56, thereby rendering the rejections moot. Nonetheless, each of the rejections applied in the Office Action is addressed below with respect to the newly added claims and to further prosecution of the present application toward allowance.